



SEQUENCE LISTING

<110> Schenk, Dale B.  
Elan Pharmaceuticals

<120> Prevention and Treatment of Amyloidogenic Diseases

<130> 015270-005913US

<140> US 09/724,953

<141> 2000-11-28

<150> US 09/585,817

<151> 2000-06-01

<150> US 60/137,010

<151> 1999-06-01

<160> 34

<170> PatentIn Ver. 2.1

<210> 1

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:influenza  
hemagglutinin HA 307-319 universal T-cell epitope

<400> 1

Pro Lys Tyr Val Lys Gln Asn Thr Leu Lys Leu Ala Thr  
1 5 10

<210> 2

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:PADRE universal  
T-cell epitope

<220>

<221> MOD\_RES

<222> (3)

<223> Xaa = any amino acid

<400> 2

Ala Lys Xaa Val Ala Ala Trp Thr Leu Lys Ala Ala Ala  
1 5 10

<210> 3

<211> 16

<212> PRT

<213> Artificial Sequence

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<220>  
<223> Description of Artificial Sequence:malaria CS T3  
epitope universal T-cell epitope

<400> 3  
Glu Lys Lys Ile Ala Lys Met Glu Lys Ala Ser Ser Val Phe Asn Val  
1 5 10 15

<210> 4  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:Hepatitis B  
surface antigen HBsAg 19-28 universal T-cell  
epitope

<400> 4  
Phe Phe Leu Leu Thr Arg Ile Leu Thr Ile  
1 5 10

Q2  
<210> 5  
<211> 19  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:heat shock  
protein 65 hsp65 153-171 universal T-cell epitope

<400> 5  
Asp Gln Ser Ile Gly Asp Leu Ile Ala Glu Ala Met Asp Lys Val Gly  
1 5 10 15

Asn Glu Gly

<210> 6  
<211> 14  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:bacillus  
Calmette-Guerin universal T-cell epitope

<400> 6  
Gln Val His Phe Gln Pro Leu Pro Pro Ala Val Val Lys Leu  
1 5 10

<210> 7  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:tetanus toxoid  
TT 830-844 universal T-cell epitope

<400> 7

Gln Tyr Ile Lys Ala Asn Ser Lys Phe Ile Gly Ile Thr Glu Leu  
1 5 10 15

<210> 8

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:tetanus toxoid  
TT 947-967 universal T-cell epitope

<400> 8

Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg Val Pro Lys Val Ser  
1 5 10 15

Ala Ser His Leu Glu  
20

<210> 9

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:HIV gp120 T1  
universal T-cell epitope

<400> 9

Lys Gln Ile Ile Asn Met Trp Gln Glu Val Gly Lys Ala Met Tyr Ala  
1 5 10 15

<210> 10

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:AN90549 (Abeta  
1-7/tetanus toxoid 830-844 in a MAP4  
configuration)

<400> 10

Asp Ala Glu Phe Arg His Asp Gln Tyr Ile Lys Ala Asn Ser Lys Phe  
1 5 10 15

Ile Gly Ile Thr Glu Leu  
20

<210> 11

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:AN90550 (Abeta  
1-7/tetanus toxoid 947-967 in a MAP4  
configuration)

<400> 11

Asp Ala Glu Phe Arg His Asp Phe Asn Asn Phe Thr Val Ser Phe Trp  
1 5 10 15

Leu Arg Val Pro Lys Val Ser Ala Ser His Leu Glu  
20 25

<210> 12

<211> 43

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:AN 90542 (Abeta  
1-7/tetanus toxoid 830-844 + 947-967 in a linear  
configuration)

<400> 12

Asp Ala Glu Phe Arg His Asp Gln Tyr Ile Lys Ala Asn Ser Lys Phe  
1 5 10 15

*a2* Ile Gly Ile Thr Glu Leu Phe Asn Asn Phe Thr Val Ser Phe Trp Leu  
20 25 30

Arg Val Pro Lys Val Ser Ala Ser His Leu Glu  
35 40

<210> 13

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:AN 90576 (Abeta  
3-9/tetanus toxoid 830-844 in a MAP4  
configuration)

<400> 13

Glu Phe Arg His Asp Ser Gly Gln Tyr Ile Lys Ala Asn Ser Lys Phe  
1 5 10 15

Ile Gly Ile Thr Glu Leu  
20

<210> 14

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:AN90562 (Abeta  
1-7/peptide on linear conformation)

<220>  
 <221> MOD\_RES  
 <222> (3)  
 <223> Xaa = any amino acid  
  
 <400> 14  
 Ala Lys Xaa Val Ala Ala Trp Thr Leu Lys Ala Ala Ala Asp Ala Glu  
     1                    5                    10                    15  
  
 Phe Arg His Asp  
             20

<210> 15  
 <211> 34  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:AN90543 (Abeta  
       1-7 X 3/peptide in linear conformation)

<220>  
 <221> MOD\_RES  
 <222> (24)  
 <223> Xaa = any amino acid

Q2  
 <400> 15  
 Asp Ala Glu Phe Arg His Asp Asp Ala Glu Phe Arg His Asp Asp Ala  
     1                    5                    10                    15  
  
 Glu Phe Arg His Asp Ala Lys Xaa Val Ala Ala Trp Thr Leu Lys Ala  
             20                    25                    30  
  
 Ala Ala

<210> 16  
 <211> 34  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:fusion protein  
       with Abeta immunogenic epitope

<220>  
 <221> MOD\_RES  
 <222> (3)  
 <223> Xaa = any amino acid

<400> 16  
 Ala Lys Xaa Val Ala Ala Trp Thr Leu Lys Ala Ala Ala Asp Ala Glu  
     1                    5                    10                    15  
  
 Phe Arg His Asp Asp Ala Glu Phe Arg His Asp Asp Ala Glu Phe Arg  
             20                    25                    30

His Asp

<210> 17  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:fusion protein  
with Abeta immunogenic epitope

<220>  
<221> MOD\_RES  
<222> (10)  
<223> Xaa = any amino acid

<400> 17  
Asp Ala Glu Phe Arg His Asp Ala Lys Xaa Val Ala Ala Trp Thr Leu  
1 5 10 15

Lys Ala Ala Ala  
20

<210> 18  
<211> 24  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:fusion protein  
with Abeta immunogenic epitope

<400> 18  
Asp Ala Glu Phe Arg His Asp Ile Ser Gln Ala Val His Ala Ala His  
1 5 10 15

Ala Glu Ile Asn Glu Ala Gly Arg  
20

<210> 19  
<211> 24  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:fusion protein  
with Abeta immunogenic epitope

<400> 19  
Phe Arg His Asp Ser Gly Tyr Ile Ser Gln Ala Val His Ala Ala His  
1 5 10 15

Ala Glu Ile Asn Glu Ala Gly Arg  
20

<210> 20

<211> 24  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:fusion protein  
with Abeta immunogenic epitope

<400> 20  
Glu Phe Arg His Asp Ser Gly Ile Ser Gln Ala Val His Ala Ala His  
1 5 10 15

Ala Glu Ile Asn Glu Ala Gly Arg  
20

<210> 21  
<211> 34  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:fusion protein  
with Abeta immunogenic epitope

Q2 <400> 21  
Pro Lys Tyr Val Lys Gln Asn Thr Leu Lys Leu Ala Thr Asp Ala Glu  
1 5 10 15

Phe Arg His Asp Asp Ala Glu Phe Arg His Asp Asp Ala Glu Phe Arg  
20 25 30

His Asp

<210> 22  
<211> 27  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:fusion protein  
with Abeta immunogenic epitope

<400> 22  
Asp Ala Glu Phe Arg His Asp Pro Lys Tyr Val Lys Gln Asn Thr Leu  
1 5 10 15

Lys Leu Ala Thr Asp Ala Glu Phe Arg His Asp  
20 25

<210> 23  
<211> 34  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:fusion protein  
with Abeta immunogenic epitope

<400> 23

Asp Ala Glu Phe Arg His Asp Asp Ala Glu Phe Arg His Asp Asp Ala  
1 5 10 15

Glu Phe Arg His Asp Pro Lys Tyr Val Lys Gln Asn Thr Leu Lys Leu  
20 25 30

Ala Thr

<210> 24

<211> 27

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:fusion protein  
with Abeta immunogenic epitope

<400> 24

Asp Ala Glu Phe Arg His Asp Asp Ala Glu Phe Arg His Asp Pro Lys  
1 5 10 15

Tyr Val Lys Gln Asn Thr Leu Lys Leu Ala Thr  
20 25

<210> 25

<211> 136

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:fusion protein  
with Abeta immunogenic epitope

<400> 25

Asp Ala Glu Phe Arg His Asp Pro Lys Tyr Val Lys Gln Asn Thr Leu  
1 5 10 15

Lys Leu Ala Thr Glu Lys Lys Ile Ala Lys Met Glu Lys Ala Ser Ser  
20 25 30

Val Phe Asn Val Gln Tyr Ile Lys Ala Asn Ser Lys Phe Ile Gly Ile  
35 40 45

Thr Glu Leu Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg Val Pro  
50 55 60

Lys Val Ser Ala Ser His Leu Glu Asp Ala Glu Phe Arg His Asp Asp  
65 70 75 80

Ala Glu Phe Arg His Asp Asp Ala Glu Phe Arg His Asp Asp Ala Glu  
85 90 95

Phe Arg His Asp Gln Tyr Ile Lys Ala Asn Ser Lys Phe Ile Gly Ile  
100 105 110



Thr Glu Leu Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg Val Pro  
115 120 125

Lys Val Ser Ala Ser His Leu Glu  
130 135

<210> 26

<211> 44

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:fusion protein  
with Abeta immunogenic epitope

<400> 26

Asp Ala Glu Phe Arg His Asp Gln Tyr Ile Lys Ala Asn Ser Lys Phe  
1 5 10 15

Ile Gly Ile Thr Glu Leu Cys Phe Asn Asn Phe Thr Val Ser Phe Trp  
20 25 30

Leu Arg Val Pro Lys Val Ser Ala Ser His Leu Glu  
35 40

<210> 27

<211> 51

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:fusion protein  
with Abeta immunogenic epitope

<400> 27

Asp Ala Glu Phe Arg His Asp Gln Tyr Ile Lys Ala Asn Ser Lys Phe  
1 5 10 15

Ile Gly Ile Thr Glu Leu Cys Phe Asn Asn Phe Thr Val Ser Phe Trp  
20 25 30

Leu Arg Val Pro Lys Val Ser Ala Ser His Leu Glu Asp Ala Glu Phe  
35 40 45

Arg His Asp  
50

<210> 28

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:fusion protein  
with Abeta immunogenic epitope on a 2 branched  
resin of Lys-Gly-Cys

<400> 28

Asp Ala Glu Phe Arg His Asp Gln Tyr Ile Lys Ala Asn Ser Lys Phe  
1 5 10 15

Ile Gly Ile Thr Glu Leu  
20

<210> 29  
<211> 26  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:synuclein  
fusion protein in MAP-4 configuration

<400> 29  
Glu Gln Val Thr Asn Val Gly Gly Ala Ile Ser Gln Ala Val His Ala  
1 5 10 15

Ala His Ala Glu Ile Asn Glu Ala Gly Arg  
20 25

<210> 30  
<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:Abeta 1-12  
peptide with Cys added

<400> 30  
Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val Cys  
1 5 10

<210> 31  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:Abeta 1-5  
peptide with Cys added

<400> 31  
Asp Ala Glu Phe Arg Cys  
1 5

<210> 32  
<211> 12  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:Abeta 33-42  
peptide with Cys added

<220>  
<221> MOD\_RES  
<222> (2)  
<223> Xaa = amino-heptanoic acid

<400> 32  
Cys Xaa Gly Leu Met Val Gly Gly Val Val Ile Ala  
1 5 10

<210> 33  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:Abeta 13-28  
peptide with Cys added

<220>  
<221> MOD\_RES  
<222> (1)  
<223> Xaa = acetyl-asparagine

A2  
<400> 33  
Xaa His His Gln Lys Leu Val Phe Phe Ala Glu Asp Val Gly Ser  
1 5 10 15

Asn Lys Gly Gly Cys  
20

<210> 34  
<211> 42  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:Abeta 42

<400> 34  
Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys  
1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile  
20 25 30

Gly Leu Met Val Gly Gly Val Val Ile Ala  
35 40